

Air Education and Training Command

Sustaining the Combat Capability of America's Air Force



U.S. AIR FORCE

Occupational Survey Report AFSC 2A7X1 AIRCRAFT METALS TECHNOLOGY

Mr. Tyrone Hill

Integrity - Service - Excellence

Report Documentation Page			Form Approved OMB No. 0704-0188		
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Overview



- Survey background
- Survey results
- Implications and way ahead



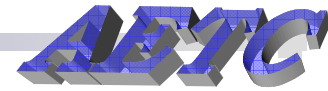
Executive Summary



- Homogeneous job structure with five independent jobs identified
- Technical tasks are performed throughout all skill levels
- Career ladder documents well-supported by survey data
- Job satisfaction indicators are very good



Work Performed



- Designs, welds, heat treats, fabricates, and machines precision tools, components, and assemblies for aerospace weapon systems and related support equipment (SE).



Current Training Program

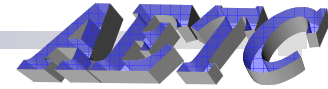


- AFSC-awarding course
 - 362 TRS, Aberdeen Proving MD
 - J3ABR2A731-003, Aircraft Metals Technology Apprentice Course, 19 weeks, 2 day
 - 29 Semester hours for CCAF
 - Programmed TPR

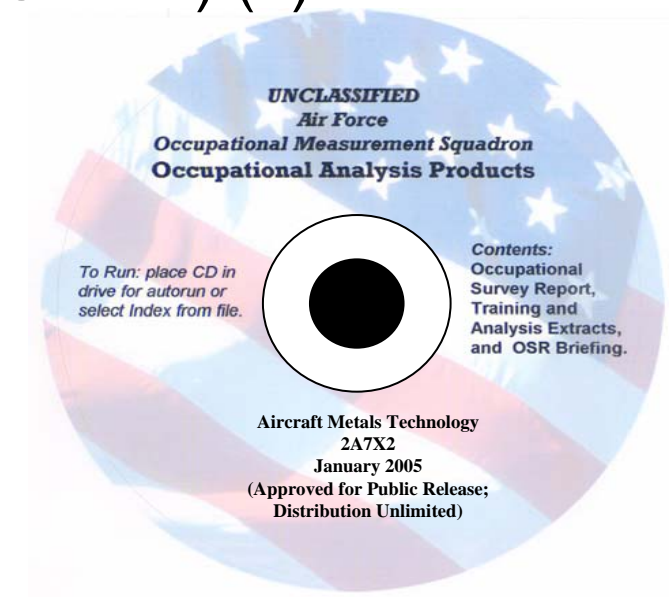
FY05: 223 students	<u>Programmed Elimination Rate</u>
FY06: 299 students	FY05: 2%
	FY06: 3%



Survey Background

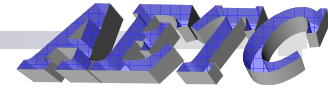


- Last Occupational Survey Report (OSR) – August 2000
- Current survey developed – August - October 2001
 - Aberdeen Proving Ground MD (Tech School) (4)
 - Barksdale AFB LA (3)
 - Travis AFB CA (4)
 - McChord AFB WA (5)
 - Nellis AFB NV (3)

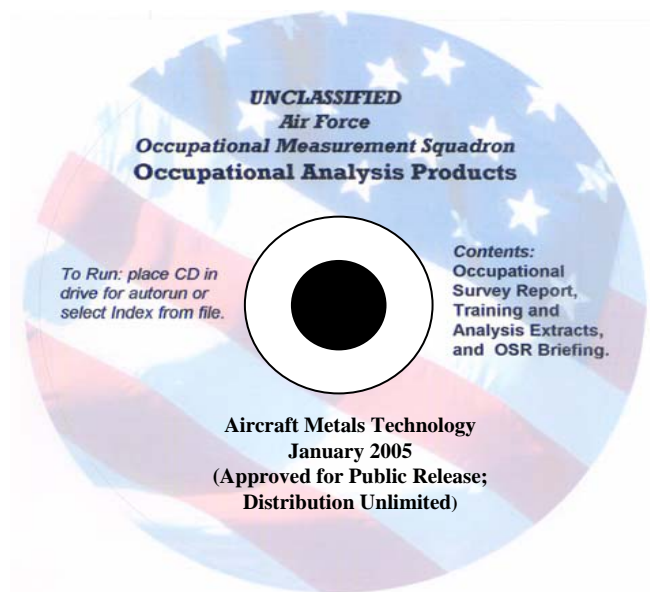




Survey Background

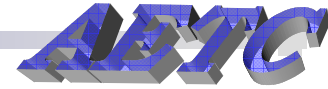


- Survey initiated to obtain data to:
 - Evaluate current classification and training documents
 - Support promotion test development
- Current survey data collected - May - August 2004
- Components surveyed:
 - Active Duty: 3-, 5-, 7-Skill Levels
 - Guard: 5- and 7-Skill Levels
 - Reserve: 5- and 7-Skill Levels





Survey Sample Characteristics



	<u>AD</u>	<u>AFRC</u>	<u>ANG</u>	<u>Total</u>
Assigned*	733	248	449	1,430
Mailed Out	678	215	416	1,309
Sample	562	108	204	798
Usable Returns	83%	49%	50%	60%

- Average time in career field for AD: 6 yrs 6 mos
- Average TAFMS for AD: 7yrs 8 mos
- Percent of AD in first enlistment: 30%

* Assigned as of Jan 05



Paygrade Characteristics



AETC



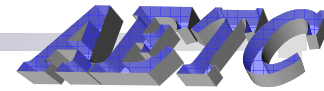
Paygrade Distribution

		Assigned*	Sample	
	E-1 - E-2 -	5%	3%	
	E-3 -	16%	18%	
	E-4 -	18%	18%	
	E-5 -	25%	27%	
	E-6 -	22%	21%	
	E-7 -	14%	13%	

* Assigned as of May 04



Command Representation



Command	Assigned %**	Sample %
ACC	28	28
PACAF	10	11
AMC	9	9
AETC	7	6
USAFE	6	6
AFSOC	4	4
AFMC	1	1
AFRC	12	12
ANG	23	23

* Assigned as of May 04

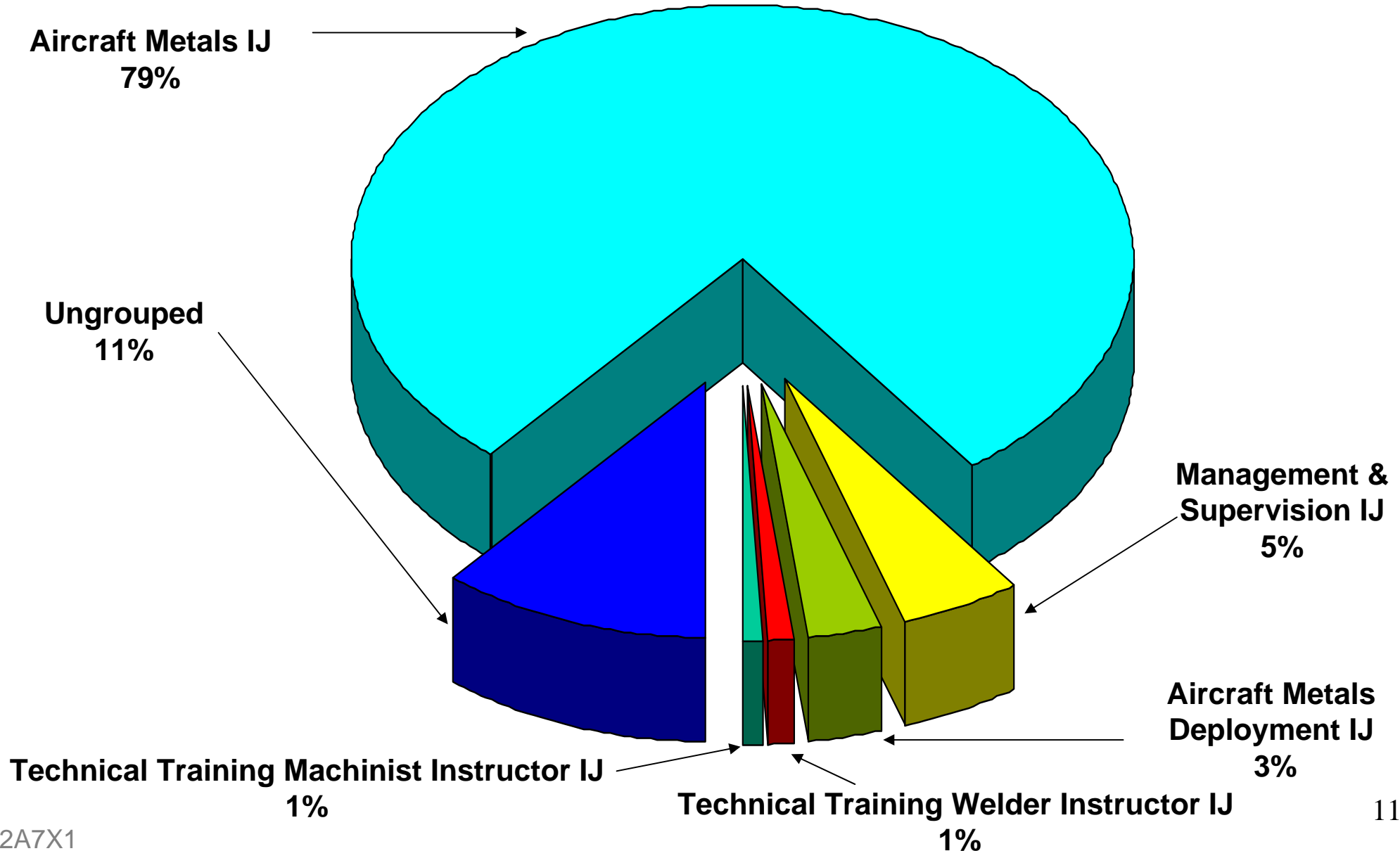


Job Structure



AETC

Sample size: 787



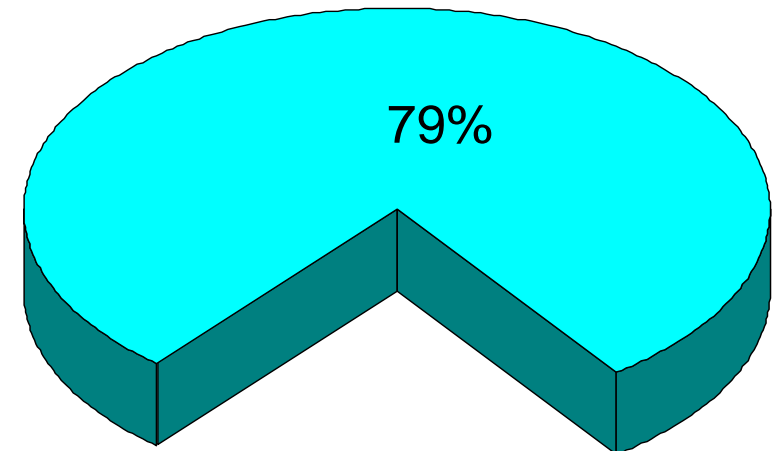


Aircraft Metals Technology IJ (N=620)



AETC

- Drill holes on lathes
- Drill holes with milling machines
- Perform parting operations on lathes
- Perform straight turning operations on lathes
- Face or center drill materials on lathes
- Remove damaged screws
- Deburr machined surfaces
- Perform filing operations on lathes
- Bore straight holes on lathes
- Maintain personal protective gear
- Clean or store hand tools

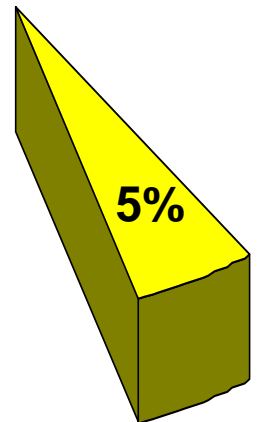




Management And Supervision IJ (N=35)



- Counsel subordinates concerning personal matters
- Conduct self-inspections or self-assessments
- Write or indorse military performance reports
- Write recommendations for awards or decorations
- Counsel trainees on training progress
- Assign personnel to work areas or duty positions
- Conduct supervisory performance feedback sessions
- Evaluate personnel for compliance with performance standards



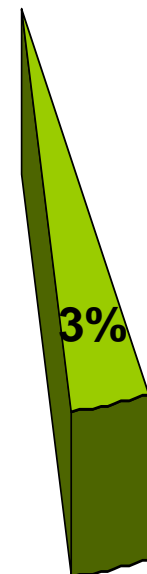


Aircraft Metals Technology Deployment IJ (N=24)



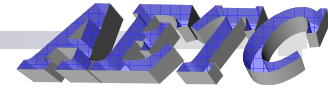
AETC

- Remove damaged screws
- Maintain personal protective gear
- Inventory composite tool kits (CTKs)
- Inspect parts
- Research information in technical orders (TOs), standards, or specifications
- Clean or store hand tools
- Remove or replace damaged bolts
- Inspect work areas for safe working environments
- Maintain precision tools or fixtures

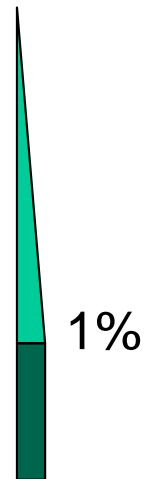




Technical Training Machinist Instructor IJ (N=8)

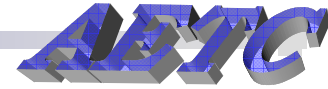


- Conduct formal course classroom training
- Evaluate progress of trainees
- Deburr machined surfaces
- Personalize lesson plans
- Administer or score tests
- Counsel trainees on training progress
- True or dress grinding wheels
- Interpret blueprints or shop drawings
- Perform straight turning operations on lathes
- Assemble or disassemble machines or equipment

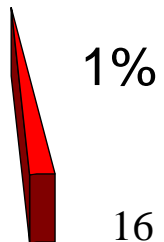




Technical Training Welder Instructor IJ (N=6)

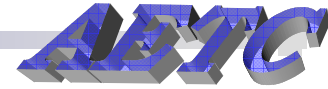


- Evaluate progress of trainees
- Conduct formal course classroom training
- Personalize lesson plans
- Administer or score tests
- Evaluate effectiveness of training programs, plans, or procedures
- Arc weld carbon steels in flat position
- Complete student entry or withdrawal forms
- Weld carbon steels with oxyacetylene equipment in flat position
- Braze ferrous metals, other than cast iron or steel castings, with oxyacetylene equipment





Career Ladder Progression



- 3- and 5-skill-level personnel
 - Work in the most technical jobs in the career field
 - Spend most of their time on technical tasks
- 7-skill-level personnel
 - Continue to perform technical tasks
 - However, take on supervisory, training, and administrative duties



Percent Across Specialty Jobs

DAFSC



	DAFSC 2A731 (N=179)	DAFSC 2A751 (N=371)	DAFSC 2A771 (N=237)
Aircraft Metals Job	85	82	69
Aircraft Metals Deployment Job	2	3	4
Management And Supervision Job	*	1	13
Technical Training Machinist Instructor Job	*	2	*
Technical Training Welder Instructor Job	*	1	*
Not Grouped	13	11	14

* Less than 1%



Career Ladder Progression

Percent Time Spent on Duties



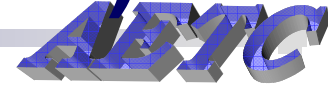
	DAFSC 2A731 (N=176)	DAFSC 2A751 (N=246)	DAFSC 2A771 (N=91)
Performing General Aircraft Metals Technology Activities	26	23	17
Maintaining Tools And Equipment	18	17	12
Performing Lathe Operations	11	9	5
Performing Milling Machine Operations	6	6	4
Performing Power Cutoff Saw, Contour Saw And Grinding Machine Operations	6	5	3
Performing Oxyacetylene Operations	4	3	2
Performing ARC Welding And Resistance Welding Operations	4	3	2
Performing Tungsten Inert Gas (TIG) Shielded Welding Operations	11	9	2
Performing Metallic Inert Gas (MIG) Shielded Welding Operations	*	2	*
Performing Aircraft Engine Repair Activities	1	2	1
Performing Cleaning And Heat Treating Activities	3	2	2
Performing Metals Testing And Identification Procedures	3	3	4
Performing Aircraft And Missile Structures And Components	1	1	1
Performing Maintenance Management Activities	1	2	6
Performing General Aircraft Or Cross Utilization Training (CUT) Activities	2	1	2

* Less than 1%



Career Ladder Progression

Percent Time Spent on Duties (Cont)



	DAFSC 2A731 (N=176)	DAFSC 2A751 (N=246)	DAFSC 2A771 (N=91)
Performing General Administrative And Technical Order (TO) Systems Activities	*	2	4
Performing General Supply And Equipment Activities	1	2	4
Performing Mobility And Contingency Activities	1	1	4
Performing Training Activities	*	3	8
Performing Management And Supervisory Activities	*	4	16

* Less than 1%



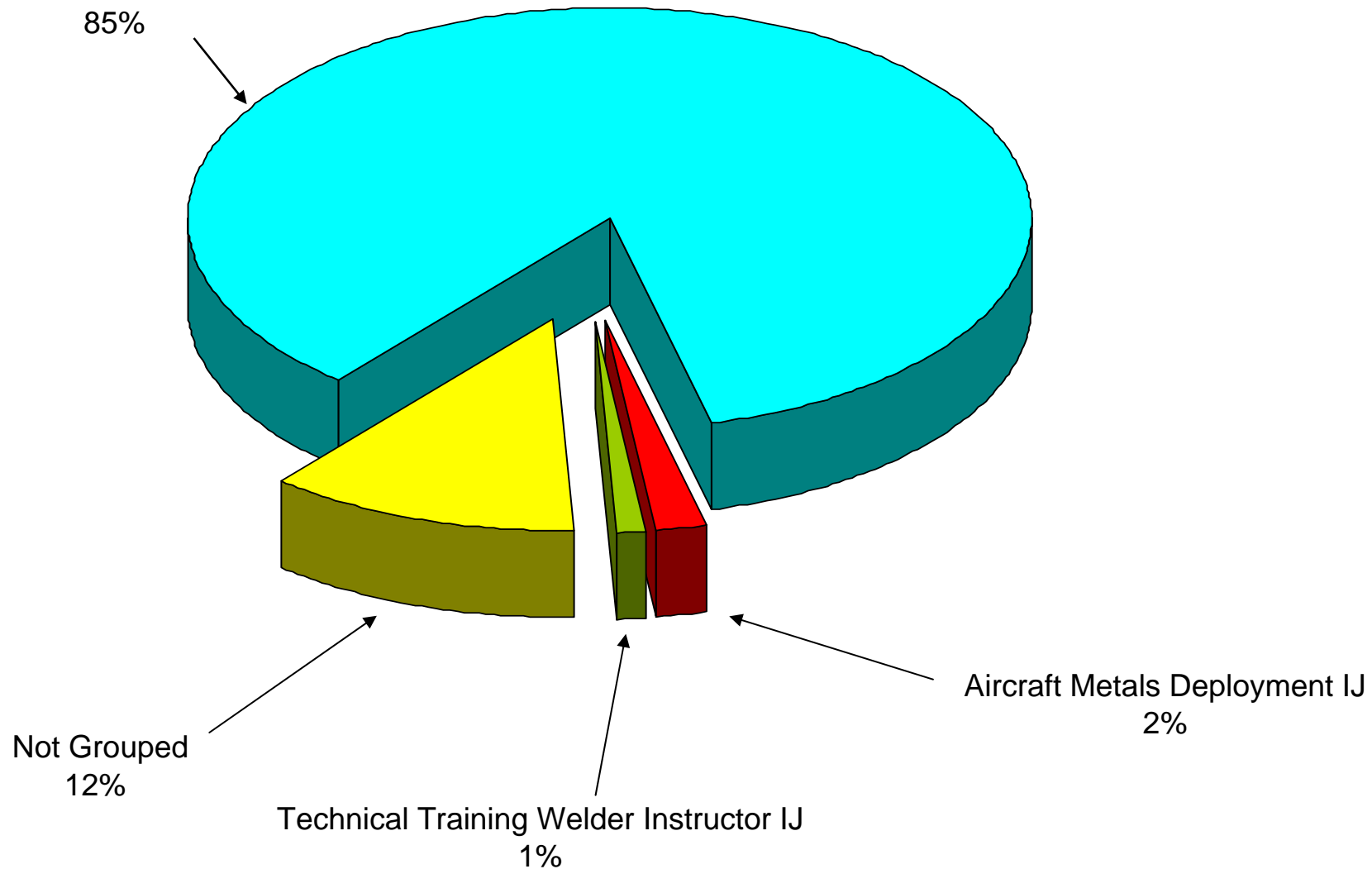
First-Enlistment Job Structure



AETC

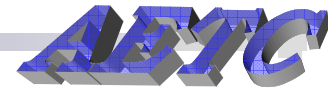
Sample size: 234

Aircraft Metals IJ
85%





First-Enlistment Personnel Representative Tasks



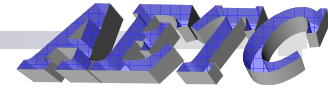
Percent
Members
Performing
(N=234)

Tasks

Remove damaged screws	91
Weld repair powered or nonpowered AGE	90
Drill holes on lathes	90
Remove or replace inserts, such as rosans or helicoils	88
Drill holes with milling machines	88
Deburr machined surfaces	87
Remove or replace damaged bolts	86
Face or center drill materials on lathes	85
Clean or lubricate milling machines	85
Perform parting operations on lathes	84
Bore straight holes on lathes	84
Perform straight turning operations on lathes	83
Perform Shop Math Calculations	83



First-Enlistment Personnel CNC Controllers



Percent
Members
Performing
(N=234)

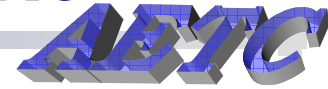
Controllers

Bridgeport Series II EZ-Track DX
EZ-TRAK
FANUC
OTHER
BOSS DX 32 CNC
EZ-PATH II
Acu-Rite Milling Controller
CENTROID M-40
BOSS10

11
7
7
7
6
6
4
2
1



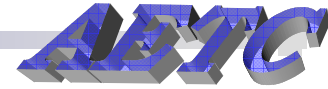
First-Enlistment Personnel Measurement Tools or Equipment



Equipment	Percent Members Performing (N=234)
Calipers, Dial	96
Dial, Indicators	86
Calipers, Measuring Inside Diameter (ID)	78
Calipers, Measuring Outside Diameter (OD)	78
Calipers, Vernier	77
Gauges, Thread	77
Digital Readout Equipment	71
Gauges, Depth	71
Gauges, Telescope	68
Gauges, Radius	64
Gauges, Go-No-Go	61



First-Enlistment Personnel Tools & Equipment



Percent
Members
Performing
(N=142)

Equipment

Welders, Tungsten Inert Gas (TIG)	96
Oxyacetylene Welding Equipment	88
Drill presses, Hand-Feed	87
Personal Protective Equipment	86
Precision Measuring Equipment	84
Grinders, Bench	83
Welders, Metallic Inert Gas (MIG)	82
Belt Sanders	81
Edge Finders	80
Arbor Presses	79
Pneumatic Hand Drills	79
Abrasive Sanding Machine	74
Plasma ARC Cutter	74
Portable Welding Machines	74
Welders, Shielded ARC	74
Grinders, Pedestal	73



Specialty Training Standard (STS) Analysis



- STS well supported by survey data
- Several technical tasks performed by 20 percent or more of members were not referenced to STS
 - These should be reviewed for possible inclusion in STS



Tasks not Referenced to STS



Examples

Tasks	Percent Members Performing		Tng Emp	Tsk Dif	ATI
	1 st Job	1 st Enl			
A0001 Bench check parts or assemblies	41	52	3.12	4.66	18
A0020 Measure surface nicks, dents, or scratches	76	80	4.19	4.46	18
B0086 Balance grinding wheels	41	44	2.05	4.89	15

Mean TE Rating is 1.78, Standard Deviation is 1.29 (HIGH TE= 3.07)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)



Job Satisfaction Indicators (Current vs. Previous Study)

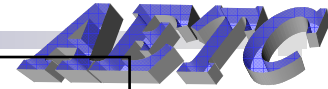


AETC

	1-48 Months		49-96 Months		97+ Months	
	2004 (N=246)	2000 (N=142)	2004 (N=62)	2000 (N=62)	2004 (N=xxx)	2000 (N=196)
Job interesting	82	85	100	92	97	94
Talents well utilized	90	94	100	100	96	100
Training well utilized	90	97	100	100	84	84
Sense of accomplishment	89	92	100	100	96	84
Plan to reenlist	71	58	100	67	79	69



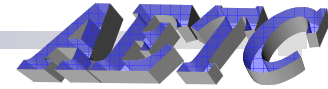
Job Satisfaction Indicators (AD) (Across Specialty Jobs)



	Aircraft Metals Job (N=620)	Deployed Aircraft Metals Job (N=24)	Instructor Welder Job (N=6)	Instructor Machinist Job (N=6)
Job interesting	95	92	75	100
Talents well utilized	92	96	88	100
Training well utilized	84	63	63	100
Sense of accomplishment	92	92	100	100
Plan to reenlist	90	50	83	50



Job Satisfaction Indicators (AD) (Across Specialty Jobs cont.)

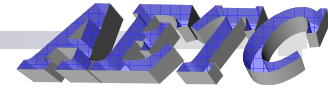


	Management & Supervision Job (N=35)
Job interesting	97
Talents well utilized	69
Training well utilized	91
Sense of accomplishment	83
Plan to reenlist	57



Retention Dimensions

First-Term Airmen (N=111)



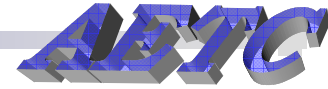
	Percent Responding	Average
<hr/>		
Planning to Reenlist (N=111)		
Military-related education/training opportunities	74	2.49
Bonus or special pay	70	2.63
Off-duty education and training opportunities	66	2.56
Job security	59	2.50
Medical or dental care for AD members	53	2.50
<hr/>		
Planning to Separate (N=199)		
Pay and allowances	65	2.56
Civilian job opportunities	60	2.67
Military lifestyle	54	2.19
Recognition of efforts	36	2.42
Location of present assignment	35	2.24

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions

Second-Term Airmen (N=134)

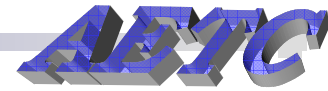


	Percent Responding	Average
<hr/>		
Planning to Reenlist (N=58)		
Bonus or special pay	79	2.74
Military-related education/training opportunities	62	2.31
Job security	55	2.59
Off-duty education and training opportunities	48	2.71
Military lifestyle	50	2.41
Planning to Separate (N=76)		
<hr/>		
Pay and allowances	79	2.72
Civilian job opportunities	54	2.68
Military lifestyle	62	2.21
Location of present assignment	41	2.19
Recognition of efforts	39	2.27

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions Career Airmen (N=230)



	Percent Responding	Average
Planning to Reenlist (N=106)		
Retirement benefits	72	2.67
Job security	48	2.34
Military lifestyle	48	2.19
Military-related education/training opportunities	47	2.23
Off-duty education and training opportunities	47	2.24
Planning to Separate (N=30)		
Pay and allowances	79	2.56
Civilian job opportunities	58	2.50
Military lifestyle	52	2.41
Number of PCS moves	37	2.53
Retirement benefits	35	2.50

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



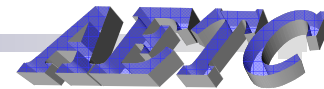
Summary of Results



- Career ladder progression typical
 - Highly technical at 3-skill level progressing to more managerial at 7-skill level
- Career ladder documents well-supported by survey data
 - STS provides comprehensive coverage of work performed by career ladder
 - Review of some items warranted
- Job satisfaction indicators
 - Similar when compared to previous study across all TAFMS groups

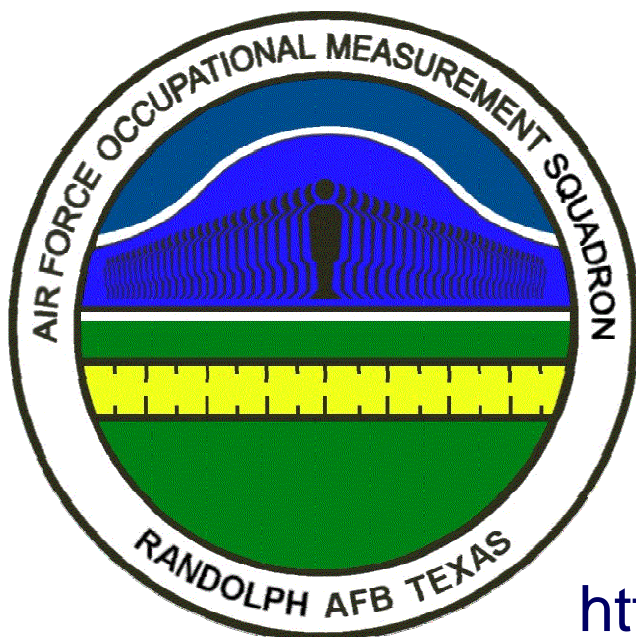


Way Ahead



- OSR Delivery Trip - scheduled for Aug 05
- Utilization and Training Workshop (U&TW) - scheduled for Aug 05 at Aberdeen Proving Grounds MD
- Next SKT rewrite (major) - scheduled for Jun 06

Questions?



AFOMS/OA

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